

Barry Power
Lakehead Pipe Line Company - Hartsdale Terminal
21 West Superior Street
Duluth, Minnesota 55802

Re: **089-14657**
Significant Source Modification to:
Part 70 Operating Permit No.: **T 089-11137-00081**

Dear Mr. Power:

Lakehead Pipe Line Company - Hartsdale Terminal was issued Part 70 Operating Permit, T 089-11137-00081, on May 1, 2001 for a crude oil storage facility. An application to modify the source was received on July 24, 2001. Pursuant to 326 IAC 2-7-10.5, the following change in operating procedures are approved::

The proposed modification requested a change in operation to allow the release of void air space during refilling of the nine (9) storage tanks, identified as 1601 through 1609 that results in the release VOC and HAPs emissions.

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter contact Mark L. Kramer, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

MLK/MES

cc: File - Lake County
Lake County Health Department
Northwest Regional Office
Air Compliance Section Inspector - Rick Massoels
Compliance Branch- Karen Nowak
Administrative and Development - Cynthia Bymaster
Technical Support and Modeling - Michele Boner

PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**Lakehead Pipe Line Company - Hartsdale Terminal
Central Avenue and Division Street
Schererville, Indiana 46375**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T 089-11137-00081	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: May 1, 2001 Expiration Date: May 1, 2006
First Significant Source Modification No.: 089-14657-00081	Conditions Affected & Added: B.8, D.1.1 through D.1.11 and Quarterly Report Form
Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: November 8, 2001

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- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provision of this permit is grounds for:
 - (1) Enforcement action;
 - (2) Permit termination, revocation and reissuance, or modification; or
 - (3) Denial of a permit renewal application.
- (b) Noncompliance with any provisions of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act.
- (c) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (d) An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

B.9 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

B.10 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Storage Tanks

Nine (9) above ground, vertical, external floating roof, storage tanks, identified as 1601 through 1609, installed in 1958, capacity: 4,200,000 gallons (100,000 barrels) of crude oil each.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR 60 Subpart Kb.

D.1.2 Void Air Space Height Limitation [326 IAC 2-3]

The total void space height for the nine (9) storage tanks, identified as 1601 through 1609, shall be limited to less than 97.19 feet per twelve (12) consecutive month period, equivalent to VOC emissions of less than twenty-five (25) tons per year. Therefore the requirements of 326 IAC 2-3 do not apply.

D.1.3 Volatile Organic Liquid Storage Vessels: Standards [326 IAC 8-9-4]

The nine (9) external floating roof storage tanks must comply with the following requirements of 326 IAC 8-9-4.

- (a) The owner or operator of each vessel with a capacity greater than or equal to thirty-nine thousand (39,000) gallons, that stores VOL with a maximum true vapor pressure greater than or equal to seventy-five hundredths (0.75) pound per square inch absolute (psia) but less than eleven and one-tenth (11.1) psia shall do the following:
 - (1) For each vessel having an external floating roof, install one (1) of the following:
 - (A) At the time of the next scheduled cleaning, but not later than ten (10) years after May 1, 1996, an external floating roof meeting the standards in subsection (e) of this rule.
 - (B) On or before May 1, 1996, a closed vent system meeting the standards in subsection (d) of this rule.
 - (C) On or before May 1, 1996, an equivalent emissions control system resulting in equivalent emissions reductions to that obtained in clause (A) of this rule.
 - (2) For each vessel subject to this subsection, the owner or operator described in the report required in section 6(b) of this rule, install one (1) of the following:
 - (A) Emission control equipment.
 - (B) A schedule for vessel cleaning and installation of emission control equipment.

- (b) On or before May 1, 1996, the owner or operator of each vessel with a capacity greater than or equal to thirty-nine thousand (39,000) gallons, that stores VOL with a maximum true vapor pressure greater than or equal to eleven and one-tenth (11.1) psia shall equip each vessel with a closed vent system with a control device meeting the standards of subsection (d).
- (c) Standards applicable to each closed vent system and control device are as follows:
 - (1) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the vessel and operated with no detectable emission as indicated by an instrument reading of less than five hundred (500) parts per million (ppm) above background and visual inspections as determined by the methods specified in 40 CFR 60, Subpart VV, 60.485(C).
 - (2) The control device shall be designed and operated to reduce inlet VOC emissions by ninety-five percent (95%) or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements in 40 CFR 60.18, General Provisions.
- (d) Standards applicable to each external floating roof are as follows:
 - (1) Each external floating roof shall be equipped with a closure device between the wall of the vessel and the roof edge. The closure device shall consist of two (2) seals, one (1) above the other. The lower seal shall be referred to as the primary seal; the upper seal shall be referred to as the secondary seal.
 - (2) Except as provided in section 5(c)(4) of this rule, the primary seal shall completely cover the annular space between the edge of the floating roof and vessel wall and shall be either a liquid-mounted seal or a shoe seal.
 - (3) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the vessel in a continuous fashion except as allowed in section 5(c)(4) of this rule.
 - (4) Except for automatic bleeder vents and rim space vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface.
 - (5) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times, without visible gap, except when the device is in actual use.
 - (6) Automatic bleeder vents shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
 - (7) Rim vents shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents shall be gasketed.
 - (8) Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least ninety percent (90%) of the area of the opening.

Compliance Determination Requirements

D.1.4 Volatile Organic Liquid Storage Vessels Roofs [326 IAC 8-9-4]

The roof shall be floating on the liquid at all times, for example, off the roof leg supports, except when the vessel is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

D.1.5 Volatile Organic Liquid Storage Vessels: Testing and Procedures [326 IAC 8-9-5]

The nine (9) external floating roof storage tanks must comply with the following requirements of 326 IAC 8-9-5.

- (a) The owner or operator of each vessel subject to section 4(a) of this rule shall meet the requirements of subsection (b), (c), or (d).
- (b) On and after May 1, 1996, except as provided in section 4(a)(3) of this rule, the owner or operator of each vessel equipped with an external floating roof shall meet the following requirements:
 - (1) Determine the gap areas and maximum gap widths between the primary seal and the wall of the vessel and between the secondary seal and the wall of the vessel according to the following frequency:
 - (A) Measurements of gaps between the vessel wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within sixty (60) days of the initial fill with VOL and at least once every five (5) years thereafter.
 - (B) Measurements of gaps between the vessel wall and the secondary seal shall be performed within sixty (60) days of the initial fill with VOL and at least once per year thereafter.
 - (C) If any source ceases to store VOL for a period of one (1) year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for purposes of this subdivision.
 - (2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:
 - (A) Measure seal gaps, if any, at one (1) or more floating roof levels when the roof is floating off the roof leg supports.
 - (B) Measure seal gaps around the entire circumference of the vessel in each place where a one-eighth (1/8) inch diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the vessel and measure the circumferential distance of each such location.
 - (C) The total surface area of each gap described in clause (B) shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.
 - (3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each by the nominal diameter of the

vessel and compare each ratio to the respective standards in subdivision (4).

- (4) Make necessary repairs or empty the vessel within forty-five (45) days of identification of seals not meeting the requirements listed in clauses (A) and (B) as follows:
 - (A) The accumulated area of gaps between the vessel wall and the mechanical shoe or liquid-mounted primary seal shall not exceed ten (10) square inches per foot of vessel diameter, and the width of any portion of any gap shall not exceed one and five-tenths (1.5) inches. There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
 - (B) The secondary seal shall meet the following requirements:
 - (i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in subdivision (2)(C).
 - (ii) The accumulated area of gaps between the vessel wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed one (1) square inch per foot of vessel diameter, and the width of any portion of any gap shall not exceed five-tenths (0.5) inch. There shall be no gaps between the vessel wall and the secondary seal when used in combination with a vapor-mounted primary seal.
 - (iii) There shall be no holes, tears, or other openings in the seal or seal fabric.
 - (C) If a failure that is detected during inspections required in subdivision (1) cannot be repaired within forty-five (45) days and if the vessel cannot be emptied within forty-five (45) days, a thirty (30) day extension may be requested from the department in the inspection report required in section 6(d)(3) of this rule. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
- (c) The owner or operator of each vessel that is equipped with a closed vent system and control device described in section 4(a)(1)(B), 4(a)(2)(B), or 4(a)(3)(B) of this rule and meeting the requirements of section 4(d) of this rule, other than a flare, shall meet the following requirement:

Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the department in accordance with subdivision (1) unless the plan was modified by the department during the review process. In this case, the modified plan applies.
- (d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in section 4(a)(4) or 4(d) of this rule shall meet the requirements specified in the general control device requirements in 40 CFR 60.18(e) and 40 CFR 60.18(f).

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.6 Crude Oil Level

Whenever the crude oil level in any of the nine (9) storage tanks falls to or below 3.75 feet from the bottom of that storage tank, the Permittee shall record the minimum crude oil level to the nearest 1/8th of an inch reached for each storage tank unloading using a Varec crude oil level gauge.

D.1.7 Visual Inspections [326 IAC 8-9-5]

Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. For all visual inspections, the following requirements apply:

- (a) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this clause exist before filling or refilling the vessel with VOL.
- (b) The owner or operator shall notify the department in writing at least thirty (30) days prior to the filling or refilling of each vessel to afford the department the opportunity to inspect the vessel prior to the filling. If the inspection required by this subdivision is not planned and the owner or operator could not have known about the inspection thirty (30) days in advance of refilling the vessel, the owner or operator shall notify the department at least seven (7) days prior to the refilling of the vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the department at least seven (7) days prior to the refilling.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.8 Standards of Performance for Volatile Organic Liquid Storage Vessels [326 IAC 12] [40 CFR 60.116b]

The nine (9) storage tanks, identified as 1601 - 1609, shall comply with the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR Part 60.116b, Subpart Kb). 40 CFR Part 60.116b paragraphs (a) and (b) require the Permittee to maintain accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage vessel.

D.1.9 Void Air Space Height

In order to comply with Condition D.1.6, the Permittee shall record the crude level void air space height each time the unloading of a storage tank results in void air space by tank number (1601 - 1609).

D.1.10 Volatile Organic Liquid Storage Vessels [326 8-9-6]

The nine (9) external floating roof storage tanks must comply with the following record keeping requirements of 326 IAC 8-9-6.

- (a) The owner or operator of each vessel subject to this rule shall keep all records required by this section for three (3) years unless specified otherwise. Records required by subsection (b) shall be maintained for the life of the vessel.
- (b) The owner or operator of each vessel to which section 1 of this rule applies shall maintain a record and submit to the department a report containing the following information for each vessel:
 - (1) The vessel identification number.

- (2) The vessel dimensions.
 - (3) The vessel capacity.
 - (4) A description of the emission control equipment for each vessel described in section 4(a) and 4(b) of this rule, or a schedule for installation of emission control equipment on vessels described in section 4(a) or 4(b) of this rule with a certification that the emission control equipment meets the applicable standards.
- (c) The owner or operator of each vessel equipped with an external floating roof shall comply with the following record keeping and reporting requirements:
 - (1) Keep a record of each gap measurement performed as required by section 5(c) of this rule. Each record shall identify the vessel in which the measurement was made and shall contain the following:
 - (A) The date of measurement.
 - (B) The raw data obtained in the measurement.
 - (C) The calculations described in section 5(c)(2) and 5(c)(3) of this rule.
 - (2) Within sixty (60) days of performing the seal gap measurements required by section 5(c)(1) of this rule, furnish the department with a report that contains the following:
 - (A) The date of measurement.
 - (B) The raw data obtained in the measurement.
 - (C) The calculations described in section 5(c)(2) and 5(c)(3) of this rule.
 - (3) After each seal gap measurement that detects gaps exceeding the limitations specified in section 5(c) of this rule, submit a report to the department within thirty (30) days of the inspection. The report shall identify the vessel and contain the information specified in subdivision (2) and the date the vessel was emptied or the repairs made and date of repair.
- (d) The owner or operator of each vessel equipped with a closed vent system with a control device shall comply with the following record keeping and reporting requirements:
 - (1) Owner or operators that equip the vessel with a control device other than a flare shall do the following:
 - (A) On or before January 1, 1996, submit an operating plan as required by section 4(d) of this rule.
 - (B) Maintain records of the following:
 - (i) The operating plan.
 - (ii) Measured values of the parameters monitored according to section 5(d)(2) of this rule.

- (2) Owner or operators that equip the vessel with a closed vent system and a flare shall meet the following requirements:
 - (A) Keep records of all periods of operation during which the flare pilot flame is absent.
 - (B) Furnish the department with a report containing the measurements required by 40 CFR 60.18(f)(1) through 40 CFR 60.18(f)(5) as required by 40 CFR 60.8. This report shall be submitted within six (6) months of the initial start-up date.
 - (C) Furnish the department with a semiannual report of all periods recorded under 40 CFR 60.115 in which the pilot flame was absent.
- (e) The owner or operator of each vessel equipped with a closed vent system and control device meeting the standards of section 4 of this rule is exempt from the requirements of subsections (g) and (h).
- (f) Except as provided in subsections (f) and (j), the owner or operator of each vessel either with a design capacity greater than or equal to thirty-nine thousand (39,000) gallons storing a VOL with a maximum true vapor pressure greater than or equal to five-tenths (0.5) pound per square inch absolute (psia) but less than seventy-five hundredths (0.75) psia shall maintain a record of the maximum true vapor pressure of the VOL stored in each vessel. The record for each vessel shall contain the following information:
 - (1) The type of VOL stored.
 - (2) The dates of the VOL storage.
 - (3) For each day of VOL storage, the average stored temperature for VOLs stored above or below the ambient temperature or average ambient temperature for VOLs stored at ambient temperature, and the corresponding maximum true vapor pressure.
- (g) Except as provided in subsection (f), the owner or operator of each vessel with a design capacity greater than or equal to thirty-nine thousand (39,000) gallons storing a liquid with a maximum true vapor pressure that is normally less than seventy-five hundredths (0.75) psia shall maintain a record and notify the department within thirty (30) days when the maximum true vapor pressure of the liquid exceeds seventy-five hundredths (0.75) psia.
- (h) Available data on the storage temperature may be used to determine the maximum true vapor pressure as follows:
 - (1) The maximum true vapor pressure for VOLs stored at temperatures above or below the ambient temperature shall correspond to the highest calendar-month average storage temperature. The maximum true vapor pressure for VOLs stored at the ambient temperature shall correspond to the local maximum monthly average temperature, as reported by the National Weather Service.
 - (2) For local crude oil or refined petroleum products, the maximum vapor pressure may be determined as follows:
 - (A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar month average temperature of the stored product may be used to determine the maxi-

maximum true vapor pressure from nomographs contained in API Bulletin 2517 unless the department specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the samples.

- (B) The maximum true vapor pressure of each type of crude oil with a Reid vapor pressure less than two (2) pounds per square inch or with physical properties that preclude determination by the recommended method shall be determined from available data and recorded if the estimated maximum true vapor pressure is greater than five-tenths (0.5) psia.
- (3) For other liquids, the maximum true vapor pressure may be determined by any of the following methods:
 - (A) Standard reference texts.
 - (B) ASTM Method D2879-92.
 - (C) Calculated or measured by a method approved by the department.
- (i) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements:
 - (1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in subsection (i).
 - (2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in section 4(a) of this rule, tests are required as follows:
 - (A) An initial physical test of the vapor pressure is required.
 - (B) A physical test at least once every six (6) months thereafter is required using one (1) of the following methods:
 - (i) ASTM Method D2879-92.
 - (ii) ASTM Method D323-82.
 - (iii) As measured by an appropriate method as approved by the department.
- (j) Notify the department thirty (30) days in advance of any gap measurements required by Condition D.1.4(b)(1) to afford the department the opportunity to have an observer present.
- (k) The owner or operator of each vessel that is equipped with a closed vent system and control device described in section 4(a)(1)(B), 4(a)(2)(B), or 4(a)(3)(B) of this rule and meeting the requirements of section 4(d) of this rule, other than a flare, shall meet the following requirements:
 - (1) On or before January 1, 1996, submit to the department an operating plan containing the following information:

- (A) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation shall include a description of the gas stream that enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapor gases, or liquid other than fuels from sources that are not subject to this rule, the efficiency demonstration shall include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of seventy-five hundredths (0.75) second and a minimum temperature of eight hundred sixteen degrees Centigrade (816EC) is used to meet the ninety-five percent (95%) requirement, documentation that those conditions will exist is sufficient to meet the requirements of this subdivision.
 - (B) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used to monitor the parameter or parameters.
- (I) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Lakehead Pipe Line Company - Hartsdale Terminal
Source Address: Central Avenue and Division Street, Schererville, Indiana 46375
Mailing Address: 21 West Superior Street, Duluth, Minnesota 55802
Part 70 Permit No.: T 089-11137-00081
Facilities: Storage Tanks, 1601 - 1609
Parameter: Void Air Space Height
Limit: Less than 97.19 feet total per twelve (12) consecutive month period

YEAR: _____

Month	Void Air Space Height (ft) Storage Tanks 1601 - 1609	Void Air Space Height (ft) Storage Tanks 1601 - 1609	Void Air Space Height (ft) Storage Tanks 1601 - 1609
	This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.

Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source and Permit Modifications

Source Background and Description

Source Name:	Lakehead Pipe Line Company - Hartsdale Terminal
Source Location:	Central Avenue and Division Street, Schererville, Indiana 46375
County:	Lake
SIC Code:	4226
Operation Permit No.:	T 089-11137-00081
Operation Permit Issuance Date:	May 1, 2001
Significant Source Modification No.:	089-14657-00081
Significant Permit Modification No.:	089-14902-00081
Permit Reviewer:	Mark L. Kramer

The Office of Air Quality (OAQ) has reviewed a modification application from Lakehead Pipe Line Company - Hartsdale Terminal relating to a change in the operation of the following existing emission units and pollution control devices:

Nine (9) above ground, vertical, external floating roof, storage tanks, identified as 1601 through 1609, installed in 1958, capacity: 4,200,000 gallons (100,000 barrels) of crude oil each.

The proposed modification requested a change in operation to allow the release of void air space during refilling of the nine (9) storage tanks, identified as 1601 - 1609, that results in the release VOC and HAPs emissions. Void space air is created when as much crude oil is emptied from the storage tank as possible. Lakehead Pipe Line's clients prefer this method of crude oil removal to ensure homogeneity of crude oil batches. As soon as the level of crude oil reaches 3.75 feet above the tank bottom, the floating roof rests on the roof support legs. Additional oil removal creates void space air. When the storage tank is refilled, the void space air is forced out and VOCs and HAPs are released to the atmosphere.

History

On July 24, 2001, Lakehead Pipe Line Company - Hartsdale Terminal submitted an application to the OAQ requesting to change the operation of emptying and refilling the storage tanks at their existing plant. Lakehead Pipe Line Company - Hartsdale Terminal was issued a Part 70 permit on May 1, 2001.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 24, 2001. Additional information was received on September 4, 2001.

Emission Calculations

(a) Potential VOC Emissions

From Part 70 Operating Permit Application:

$$\text{HAP concentration in void space} = 52.1 \text{ g/m}^3$$

$$\text{Mass}_{\text{VOC}} / \text{Mass}_{\text{HAP}} = 29.16 / 2.6 = 11.2153846$$

The maximum annual potential void space created is determined by the following equations:

$$\text{Maximum potential void space} = \text{Vvoid maximum} * \text{Max. turnovers}$$

$$\text{Vvoid maximum} = \pi (R^2) (h)$$

where:

$$\begin{aligned} R &= \text{Radius of tank (feet)} = 67 \text{ feet} \\ h &= \text{Maximum void height in tank} = 2.75 \text{ feet (3.75 - 1.00)} \\ \text{Max. turnovers} &= 121.9 \text{ per year} \end{aligned}$$

$$\begin{aligned} \text{Maximum annual potential void space} &= \pi (67 \text{ ft})^2 * (2.75 \text{ ft}) * (121.9 \text{ turn./year}) = \\ &= 4,727,547.2 \text{ ft}^3/\text{yr per tank} \end{aligned}$$

$$\text{Therefore nine (9) tanks} = 4,727,547.2 * 9 = 42,547,924.8 \text{ ft}^3/\text{yr} = 1,204,823 \text{ m}^3/\text{yr}$$

$$\text{Potential HAPs} = 1,204,823 \text{ m}^3/\text{yr} * 52.1 \text{ g/m}^3 = 62,771,281 \text{ g/yr} = 69.2 \text{ tons/yr}$$

$$\text{Potential VOC} = 69.2 \text{ tons/yr} * 29.16 \text{ g of VOC} / 2.6 \text{ g of HAP} = 776 \text{ tons/yr}$$

(b) Limited VOC Emissions

The following calculations determine the volume of void space and equivalent total void space height, equivalent to less than twenty-five (25) tons of VOC emitted per year from the nine (9) crude oil storage tanks at the Hartsdale Terminal of the Lakehead Pipe Line Company.

$$\text{Operational limit} = \text{VOC emissions less than twenty-five (25) tons per year}$$

From Part 70 Operating Permit Application:

$$\text{HAP concentration in void space} = 52.1 \text{ g/m}^3$$

$$\text{Mass}_{\text{VOC}} / \text{Mass}_{\text{HAP}} = 29.16 / 2.6 = 11.2153846$$

$$25 \text{ tons} = 25 * (453.59 \text{ g/pound}) (2,000 \text{ pounds/ton}) = 22,679,500 \text{ grams}$$

$$\text{Volume of Void Air Space, Equivalent to VOC Less Than 25.0 tons per year} =$$

Weight of VOC (g) / density HAPs in Void Air Space (g/m³) / Mass Ratio VOC/HAPs =

$$22,679,500 \text{ grams} / 52.1 \text{ g/m}^3 / 11.2153846 = \text{less than } 38,813.39 \text{ m}^3$$

Therefore, in order to limit VOC emissions from the void air space to less than twenty-five (25) tons per year, the total volume of void air space shall be less than 38,813.39 cubic meters (1,370,682 cubic feet) per twelve (12) consecutive month period.

The limited VOC emissions of less than twenty-five (25) tons per year is equal to a limited HAPs emission rate of 2.23 tons of HAPs.

The limited void space volume, equivalent to VOC emissions of less than twenty-five (25) tons per year is 1,370,682 cubic feet per twelve (12) consecutive month period. The total void space height is equivalent to the limited void space volume divided by the area of the tank. Since all tanks have the same radius (67.0 feet), the total void space height limit equals:

$$1,370,682 \text{ ft}^3 / (\pi * 67.0^2) = 97.19 \text{ feet}$$

IDEM, OAQ has determined that Lakehead Pipe Line Company's request to limit the number of tank turnover cycles that create void air space does not insure that the total VOC emissions would be limited to less than twenty-five (25) tons per year because each turnover may have a different void air space volume depending on the actual void air space height created in that specific tank turnover cycle. Therefore, the total void space height was limited to render the requirements of 326 IAC 2-3 not applicable.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	-
PM ₁₀	-
SO ₂	-
VOC	776
CO	-
NO _x	-

HAPs	Potential To Emit (tons/year)
Total HAP	69.2

Justification for Modification

The Part 70 Operating Permit is being modified through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(1), (4) and (6) since this proposed modification would be subject to 326 IAC 2-3 if the potential to emit VOC was not limited, the potential to emit VOC exceeds twenty-five (25) tons per year and the potential to emit a single HAP and the combination of HAPs exceeds ten (10) tons and twenty-five (25) tons per year, respectively.

The proposed operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification (SPM 089-14902-00081) in accordance with 326 IAC 2-7-12(d). The permit modification does not qualify as a minor permit modification since the modification does involve significant changes to existing monitoring, reporting, or record keeping requirements in the Part 70 permit and does require a determination of an emission limit. The Significant Permit Modification will give the source approval to operate the proposed emission unit.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	nonattainment
NO ₂	attainment
Ozone	severe nonattainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) Portions Lake County have been classified as nonattainment for SO₂. The source is located in one (1) of these nonattainment areas. Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (c) Lake County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (d) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	0.096
PM ₁₀	0.096
SO ₂	0.090
VOC	29.3
CO	0.292
NO _x	1.36

This existing source is a major stationary source because a nonattainment regulated pollutant is emitted at a rate of twenty-five (25) tons per year or more in Lake County.

- (b) These emissions are based upon the emission calculations reported in the Appendix A of the TSD for the Part 70 Operating Permit T 089-11137, issued May 1, 2001.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Pollutant	PM (tons/yr)	PM ₁₀ (tons/yr)	SO ₂ (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO _x (tons/yr)	HAPs (tons/yr)
Proposed Modification	-	-	-	less than 25	-	-	2.23
Offset Significant Level	25	15	40	25	100	40	-

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the Emission Offset significant levels, and
- (b) There have been no increases in VOC emissions at the source pursuant to 326 IAC 2-3-1(j) over the last five- (5-) year period. Thus, this proposed source modification is considered "de minimis" and, therefore, not subject to NSR requirements.
- (c) The total void space height for the nine (9) storage tanks shall be limited to less than 97.19 feet per twelve (12) consecutive month period, equivalent to VOC emissions of less than twenty-five (25) tons per year, therefore, 326 IAC 2-3 requirements do not apply.

Federal Rule Applicability

- (a) This significant modification does not involve a pollutant-specific emissions unit with the potential to emit after control in an amount equal to or greater than one hundred (100) tons per year. Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are not applicable.
- (b) The storage tanks, identified as 1601 through 1609, were all constructed in 1958 and were not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Parts 60. 110, 110a - 115a or 110b - 117b, Subparts K, Ka, and Kb prior to this proposed modification because these significant emission units were all constructed prior to the earliest applicability date of June 11, 1973 for these Subparts. However, the proposed change in unloading procedure does constitute modification of these storage tanks since the operational changes result in an increase in actual hourly VOC emissions. Therefore, storage tanks, identified as 1601 through 1609, are subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR Parts 60. 110b - 117b, Subpart Kb). Since the true vapor pressure of the crude oil stored is less than 3.5 kiloPascals, the storage tanks are only subject to the record keeping provision of paragraphs a and b of 40 CFR Parts 60. 116b which requires records of dimensions and capacity of the storage vessels.
- (c) There are still no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20, 40 CFR 61 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Individual Facilities

There are no new state rules applicable to the nine (9) storage tanks due to this proposed modification.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to these nine storage tanks are as follows:

The nine (9) storage tanks have applicable compliance monitoring condition as specified below:

Whenever the crude oil level in feet and inches in any of the nine (9) storage tanks falls to or below 3.75 feet from the bottom of that storage tank, the Permittee shall record the minimum crude oil level to the nearest 1/8th of an inch reached for each storage tank unloading using a Varec crude oil level gauge.

Proposed Changes

The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language appears in **bold**):

Condition B.8 (Compliance with Permit Conditions) has been revised to clarify that noncompliance with any requirement of this permit may result in an enforcement action against the Permittee, an action to modify, revoke, reissue or terminate the source's permit, and/or a denial of the Permittee's application to renew the permit. In addition, except for those permit conditions that are not federally enforceable, noncompliance is also a violation of the federal Clean Air Act as follows:

B.8 Compliance with Permit Conditions [326 IAC 2-7-5(6)(A)] [326 IAC 2-7-5(6)(B)]

- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provision of this permit ~~except those specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act and is grounds for:~~
 - (1) Enforcement action;
 - (2) Permit termination, revocation and reissuance, or modification; or
 - (3) Denial of a permit renewal application.
- (b) **Noncompliance with any provisions of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act.**
- (c) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (d) An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Storage Tanks

Nine (9) above ground, vertical, external floating roof, storage tanks, identified as 1601 through 1609, installed in 1958, capacity: 4,200,000 gallons (100,000 barrels) of crude oil each.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in

40 CFR 60 Subpart Kb.

D.1.2 Void Air Space Height Limitation [326 IAC 2-3]

The total void space height for the nine (9) storage tanks, identified as 1601 through 1609, shall be limited to less than 97.19 feet per twelve (12) consecutive month period, equivalent to VOC emissions of less than twenty-five (25) tons per year. Therefore the requirements of 326 IAC 2-3 do not apply.

D.1.34 Volatile Organic Liquid Storage Vessels: Standards [326 IAC 8-9-4]

The nine (9) external floating roof storage tanks must comply with the following requirements of 326 IAC 8-9-4.

- (a) The owner or operator of each vessel with a capacity greater than or equal to thirty-nine thousand (39,000) gallons, that stores VOL with a maximum true vapor pressure greater than or equal to seventy-five hundredths (0.75) pound per square inch absolute (psia) but less than eleven and one-tenth (11.1) psia shall do the following:
 - (1) For each vessel having an external floating roof, install one (1) of the following:
 - (A) At the time of the next scheduled cleaning, but not later than ten (10) years after May 1, 1996, an external floating roof meeting the standards in subsection (e) **of this rule**.
 - (B) On or before May 1, 1996, a closed vent system meeting the standards in subsection (d) **of this rule**.
 - (C) On or before May 1, 1996, an equivalent emissions control system resulting in equivalent emissions reductions to that obtained in clause (A) **of this rule**.
 - (2) For each vessel subject to this subsection, the owner or operator described in the report required in section 6(b) of this rule, install one (1) of the following:
 - (A) Emission control equipment.
 - (B) A schedule for vessel cleaning and installation of emission control equipment.
- (b) On or before May 1, 1996, the owner or operator of each vessel with a capacity greater than or equal to thirty-nine thousand (39,000) gallons, that stores VOL with a maximum true vapor pressure greater than or equal to eleven and one-tenth (11.1) psia shall equip each vessel with a closed vent system with a control device meeting the standards of subsection (d).
- (c) Standards applicable to each closed vent system and control device are as follows:
 - (1) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the vessel and operated with no detectable emission as indicated by an instrument reading of less than five hundred (500) parts per million (ppm) above background and visual inspections as determined by the methods specified in 40 CFR 60, Subpart VV, 60.485(C).
 - (2) The control device shall be designed and operated to reduce inlet VOC emissions by ninety-five percent (95%) or greater. If a flare is used as the control device, it

shall meet the specifications described in the general control device requirements in 40 CFR 60.18, General Provisions.

(d) Standards applicable to each external floating roof are as follows:

- (1) Each external floating roof shall be equipped with a closure device between the wall of the vessel and the roof edge. The closure device shall consist of two (2) seals, one (1) above the other. The lower seal shall be referred to as the primary seal; the upper seal shall be referred to as the secondary seal.
- (2) Except as provided in section 5(c)(4) of this rule, the primary seal shall completely cover the annular space between the edge of the floating roof and vessel wall and shall be either a liquid-mounted seal or a shoe seal.
- (3) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the vessel in a continuous fashion except as allowed in section 5(c)(4) of this rule.
- (4) Except for automatic bleeder vents and rim space vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface.
- (5) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times, without visible gap, except when the device is in actual use.
- (6) Automatic bleeder vents shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- (7) Rim vents shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents shall be gasketed.
- (8) Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least ninety percent (90%) of the area of the opening.

Compliance Determination Requirements

D.1.42 Volatile Organic Liquid Storage Vessels Roofs [326 IAC 8-9-4]

The roof shall be floating on the liquid at all times, for example, off the roof leg supports, except when the vessel is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

D.1.53 Volatile Organic Liquid Storage Vessels: Testing and Procedures [326 IAC 8-9-5]

The nine (9) external floating roof storage tanks must comply with the following requirements of 326 IAC 8-9-5.

- (a) The owner or operator of each vessel subject to section 4(a) of this rule shall meet the requirements of subsection (b), (c), or (d).
- (b) On and after May 1, 1996, except as provided in section 4(a)(3) of this rule, the owner or operator of each vessel equipped with an external floating roof shall meet the following

requirements:

- (1) Determine the gap areas and maximum gap widths between the primary seal and the wall of the vessel and between the secondary seal and the wall of the vessel according to the following frequency:
 - (A) Measurements of gaps between the vessel wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within sixty (60) days of the initial fill with VOL and at least once every five (5) years thereafter.
 - (B) Measurements of gaps between the vessel wall and the secondary seal shall be performed within sixty (60) days of the initial fill with VOL and at least once per year thereafter.
 - (C) If any source ceases to store VOL for a period of one (1) year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for purposes of this subdivision.
- (2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:
 - (A) Measure seal gaps, if any, at one (1) or more floating roof levels when the roof is floating off the roof leg supports.
 - (B) Measure seal gaps around the entire circumference of the vessel in each place where a one-eighth (1/8) inch diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the vessel and measure the circumferential distance of each such location.
 - (C) The total surface area of each gap described in clause (B) shall be determined by using probes of various widths to measure accurately the actual distance from the vessel wall to the seal and multiplying each such width by its respective circumferential distance.
- (3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each by the nominal diameter of the vessel and compare each ratio to the respective standards in subdivision (4).
- (4) Make necessary repairs or empty the vessel within forty-five (45) days of identification of seals not meeting the requirements listed in clauses (A) and (B) as follows:
 - (A) The accumulated area of gaps between the vessel wall and the mechanical shoe or liquid-mounted primary seal shall not exceed ten (10) square inches per foot of vessel diameter, and the width of any portion of any gap shall not exceed one and five-tenths (1.5) inches. There shall be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
 - (B) The secondary seal shall meet the following requirements:
 - (i) The secondary seal shall be installed above the primary seal so that it completely covers the space between the roof edge and the vessel wall except as provided in subdivision (2)(C).

- (ii) The accumulated area of gaps between the vessel wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed one (1) square inch per foot of vessel diameter, and the width of any portion of any gap shall not exceed five-tenths (0.5) inch. There shall be no gaps between the vessel wall and the secondary seal when used in combination with a vapor-mounted primary seal.
 - (iii) There shall be no holes, tears, or other openings in the seal or seal fabric.
- (C) If a failure that is detected during inspections required in subdivision (1) cannot be repaired within forty-five (45) days and if the vessel cannot be emptied within forty-five (45) days, a thirty (30) day extension may be requested from the department in the inspection report required in section 6(d)(3) of this rule. Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
- (c) The owner or operator of each vessel that is equipped with a closed vent system and control device described in section 4(a)(1)(B), 4(a)(2)(B), or 4(a)(3)(B) of this rule and meeting the requirements of section 4(d) of this rule, other than a flare, shall meet the following requirement:

Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the department in accordance with subdivision (1) unless the plan was modified by the department during the review process. In this case, the modified plan applies.
- (d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in section 4(a)(4) or 4(d) of this rule shall meet the requirements specified in the general control device requirements in 40 CFR 60.18(e) and 40 CFR 60.18(f).

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.6 Crude Oil Level

Whenever the crude oil level in any of the nine (9) storage tanks falls to or below 3.75 feet from the bottom of that storage tank, the Permittee shall record the minimum crude oil level to the nearest 1/8th of an inch reached for each storage tank unloading using a Varec crude oil level gauge.

D.1.74 Visual Inspections [326 IAC 8-9-5]

Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. For all visual inspections, the following requirements apply:

- (a) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this clause exist before filling or refilling the vessel with VOL.
- (b) The owner or operator shall notify the department in writing at least thirty (30) days prior to

the filling or refilling of each vessel to afford the department the opportunity to inspect the vessel prior to the filling. If the inspection required by this subdivision is not planned and the owner or operator could not have known about the inspection thirty (30) days in advance of refilling the vessel, the owner or operator shall notify the department at least seven (7) days prior to the refilling of the vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the department at least seven (7) days prior to the refilling.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

**D.1.8 Standards of Performance for Volatile Organic Liquid Storage Vessels [326 IAC 12]
[40 CFR 60.116b]**

The nine (9) storage tanks, identified as 1601 - 1609, shall comply with the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR Part 60.116b, Subpart Kb). 40 CFR Part 60.116b paragraphs (a) and (b) require the Permittee to maintain accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage vessel.

D.1.9 Void Air Space Height

In order to comply with Condition D.1.6, the Permittee shall record the crude level void air space height each time the unloading of a storage tank results in void air space by tank number (1601 - 1609).

D.1.510 Volatile Organic Liquid Storage Vessels [326 IAC 8-9-6]

The nine (9) external floating roof storage tanks must comply with the following record keeping requirements of 326 IAC 8-9-6.

- (a) The owner or operator of each vessel subject to this rule shall keep all records required by this section for three (3) years unless specified otherwise. Records required by subsection (b) shall be maintained for the life of the vessel.
- (b) The owner or operator of each vessel to which section 1 of this rule applies shall maintain a record and submit to the department a report containing the following information for each vessel:
 - (1) The vessel identification number.
 - (2) The vessel dimensions.
 - (3) The vessel capacity.
 - (4) A description of the emission control equipment for each vessel described in section 4(a) and 4(b) of this rule, or a schedule for installation of emission control equipment on vessels described in section 4(a) or 4(b) of this rule with a certification that the emission control equipment meets the applicable standards.
- (c) The owner or operator of each vessel equipped with an external floating roof shall comply with the following record keeping and reporting requirements:
 - (1) Keep a record of each gap measurement performed as required by section 5(c) of this rule. Each record shall identify the vessel in which the measurement was made

and shall contain the following:

- (A) The date of measurement.
 - (B) The raw data obtained in the measurement.
 - (C) The calculations described in section 5(c)(2) and 5(c)(3) of this rule.
- (2) Within sixty (60) days of performing the seal gap measurements required by section 5(c)(1) of this rule, furnish the department with a report that contains the following:
- (A) The date of measurement.
 - (B) The raw data obtained in the measurement.
 - (C) The calculations described in section 5(c)(2) and 5(c)(3) of this rule.
- (3) After each seal gap measurement that detects gaps exceeding the limitations specified in section 5(c) of this rule, submit a report to the department within thirty (30) days of the inspection. The report shall identify the vessel and contain the information specified in subdivision (2) and the date the vessel was emptied or the repairs made and date of repair.
- (d) The owner or operator of each vessel equipped with a closed vent system with a control device shall comply with the following record keeping and reporting requirements:
- (1) Owner or operators that equip the vessel with a control device other than a flare shall do the following:
 - (A) On or before January 1, 1996, submit an operating plan as required by section 4(d) of this rule.
 - (B) Maintain records of the following:
 - (i) The operating plan.
 - (ii) Measured values of the parameters monitored according to section 5(d)(2) of this rule.
 - (2) Owner or operators that equip the vessel with a closed vent system and a flare shall meet the following requirements:
 - (A) Keep records of all periods of operation during which the flare pilot flame is absent.
 - (B) Furnish the department with a report containing the measurements required by 40 CFR 60.18(f)(1) through 40 CFR 60.18(f)(5) as required by 40 CFR 60.8. This report shall be submitted within six (6) months of the initial start-up date.
 - (C) Furnish the department with a semiannual report of all periods recorded under 40 CFR 60.115 in which the pilot flame was absent.

- (e) The owner or operator of each vessel equipped with a closed vent system and control device meeting the standards of section 4 of this rule is exempt from the requirements of subsections (g) and (h).
- (f) Except as provided in subsections (f) and (j), the owner or operator of each vessel either with a design capacity greater than or equal to thirty-nine thousand (39,000) gallons storing a VOL with a maximum true vapor pressure greater than or equal to five-tenths (0.5) pound per square inch absolute (psia) but less than seventy-five hundredths (0.75) psia shall maintain a record of the maximum true vapor pressure of the VOL stored in each vessel. The record for each vessel shall contain the following information:
 - (1) The type of VOL stored.
 - (2) The dates of the VOL storage.
 - (3) For each day of VOL storage, the average stored temperature for VOLs stored above or below the ambient temperature or average ambient temperature for VOLs stored at ambient temperature, and the corresponding maximum true vapor pressure.
- (g) Except as provided in subsection (f), the owner or operator of each vessel with a design capacity greater than or equal to thirty-nine thousand (39,000) gallons storing a liquid with a maximum true vapor pressure that is normally less than seventy-five hundredths (0.75) psia shall maintain a record and notify the department within thirty (30) days when the maximum true vapor pressure of the liquid exceeds seventy-five hundredths (0.75) psia.
- (h) Available data on the storage temperature may be used to determine the maximum true vapor pressure as follows:
 - (1) The maximum true vapor pressure for VOLs stored at temperatures above or below the ambient temperature shall correspond to the highest calendar-month average storage temperature. The maximum true vapor pressure for VOLs stored at the ambient temperature shall correspond to the local maximum monthly average temperature, as reported by the National Weather Service.
 - (2) For local crude oil or refined petroleum products, the maximum vapor pressure may be determined as follows:
 - (A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 unless the department specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the samples.
 - (B) The maximum true vapor pressure of each type of crude oil with a Reid vapor pressure less than two (2) pounds per square inch or with physical properties that preclude determination by the recommended method shall be determined from available data and recorded if the estimated maximum true vapor pressure is greater than five-tenths (0.5) psia.
 - (3) For other liquids, the maximum true vapor pressure may be determined by any of the following methods:

- (A) Standard reference texts.
 - (B) ASTM Method D2879-92.
 - (C) Calculated or measured by a method approved by the department.
- (i) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements:
 - (1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in subsection (i).
 - (2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in section 4(a) of this rule, tests are required as follows:
 - (A) An initial physical test of the vapor pressure is required.
 - (B) A physical test at least once every six (6) months thereafter is required using one (1) of the following methods:
 - (i) ASTM Method D2879-92.
 - (ii) ASTM Method D323-82.
 - (iii) As measured by an appropriate method as approved by the department.
- (j) Notify the department thirty (30) days in advance of any gap measurements required by Condition D.1.53(b)(1) to afford the department the opportunity to have an observer present.
- (k) The owner or operator of each vessel that is equipped with a closed vent system and control device described in section 4(a)(1)(B), 4(a)(2)(B), or 4(a)(3)(B) of this rule and meeting the requirements of section 4(d) of this rule, other than a flare, shall meet the following requirements:
 - (1) On or before January 1, 1996, submit to the department an operating plan containing the following information:
 - (A) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation shall include a description of the gas stream that enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapor gases, or liquid other than fuels from sources that are not subject to this rule, the efficiency demonstration shall include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of seventy-five hundredths (0.75) second and a minimum temperature of eight hundred sixteen degrees Centigrade

(816EC) is used to meet the ninety-five percent (95%) requirement, documentation that those conditions will exist is sufficient to meet the requirements of this subdivision.

- (B) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used to monitor the parameter or parameters.
- (I) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.2 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

Part 70 Quarterly Report

Source Name: Lakehead Pipe Line Company - Hartsdale Terminal
Source Address: Central Avenue and Division Street, Schererville, Indiana 46375
Mailing Address: 21 West Superior Street, Duluth, Minnesota 55802
Part 70 Permit No.: T 089-11137-00081
Facilities: Storage Tanks, 1601 - 1609
Parameter: Void Air Space Height
Limit: Less than 97.19 feet total per twelve (12) consecutive month period

YEAR: _____

Month	Void Air Space Height (ft) Storage Tanks 1601 - 1609	Void Air Space Height (ft) Storage Tanks 1601 - 1609	Void Air Space Height (ft) Storage Tanks 1601 - 1609
	This Month	Previous 11 Months	12 Month Total

9 No deviation occurred in this month.

9 Deviation/s occurred in this month.

Deviation has been reported on: _____

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Note: Entire Permit

All references to the Compliance Data Section have been changed to Compliance Branch.

Conclusion

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 089-14657-00081 and Part 70 Significant Permit Modification No. 089-14902-00081.

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(2) Each owner or operator of each storage vessel equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112a (a)(3) and (b).

[45 FR 23379, Apr. 4, 1980]

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 40 cubic meters (m^3) that is used to store volatile organic liquids (VOL's) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) Except as specified in paragraphs (a) and (b) of § 60.116b, storage vessels with design capacity less than 75 m^3 are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(c) Except as specified in paragraphs (a) and (b) of § 60.116b, vessels either with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kPa or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to $1,589.874 \text{ m}^3$ used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

(a) *Bulk gasoline plant* means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

(b) *Condensate* means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(c) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

(d) *Fill* means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

(e) *Gasoline service station* means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

(f) *Maximum true vapor pressure* means the equilibrium partial pressure exerted by the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average

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temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM Method D2879–83 (incorporated by reference—see § 60.17);

(4) Any other method approved by the Administrator.

(g) *Reid vapor pressure* means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 (incorporated by reference—see § 60.17).

(h) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(i) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(j) *Storage vessel* means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or

(2) Subsurface caverns or porous rock reservoirs.

(k) *Volatile organic liquid (VOL)* means any organic liquid which can emit volatile organic compounds into the atmosphere except those VOL's that emit only those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone. These compounds are identified in EPA statements on ozone abatement policy for SIP revisions (42 FR 35314, 44 FR 32042, 45 FR 32424, and 45 FR 48941).

(l) *Waste* means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically

treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be

vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel

with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in § 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

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(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§ 60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m³ which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia ("site").

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit

shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) After installing the control equipment required to meet § 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be

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emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in § 60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator

could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet § 60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of

this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm² per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). Such extension

request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.112b (a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements.

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(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112b (a)(3) or (b)(2) shall meet the requirements as speci-

fied in the general control device requirements, § 60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

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(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 60.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 60.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by

§ 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with § 60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under § 60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§ 60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m³ is subject to no provision of this subpart other than those required by this paragraph.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage

temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM Method D2879-83 (incorporated by reference—see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

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(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM Method D2879-83 (incorporated by reference—see §60.17); or

(ii) ASTM Method D323-82 (incorporated by reference—see §60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specifications of §60.112b is exempt from the requirements of paragraphs (c) and (d) of this section.

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Subpart L—Standards of Performance for Secondary Lead Smelters

§ 60.120 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary lead smelters: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

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§ 60.121 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Reverberatory furnace* includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(b) *Secondary lead smelter* means any facility producing lead from a leadbearing scrap material by smelting to the metallic form.

(c) *Lead* means elemental lead or alloys in which the predominant component is lead.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974]

§ 60.122 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9317, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.123 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.122 as follows: